

REMARKS/ARGUMENTS

Favorable reconsideration of the present application is respectfully requested.

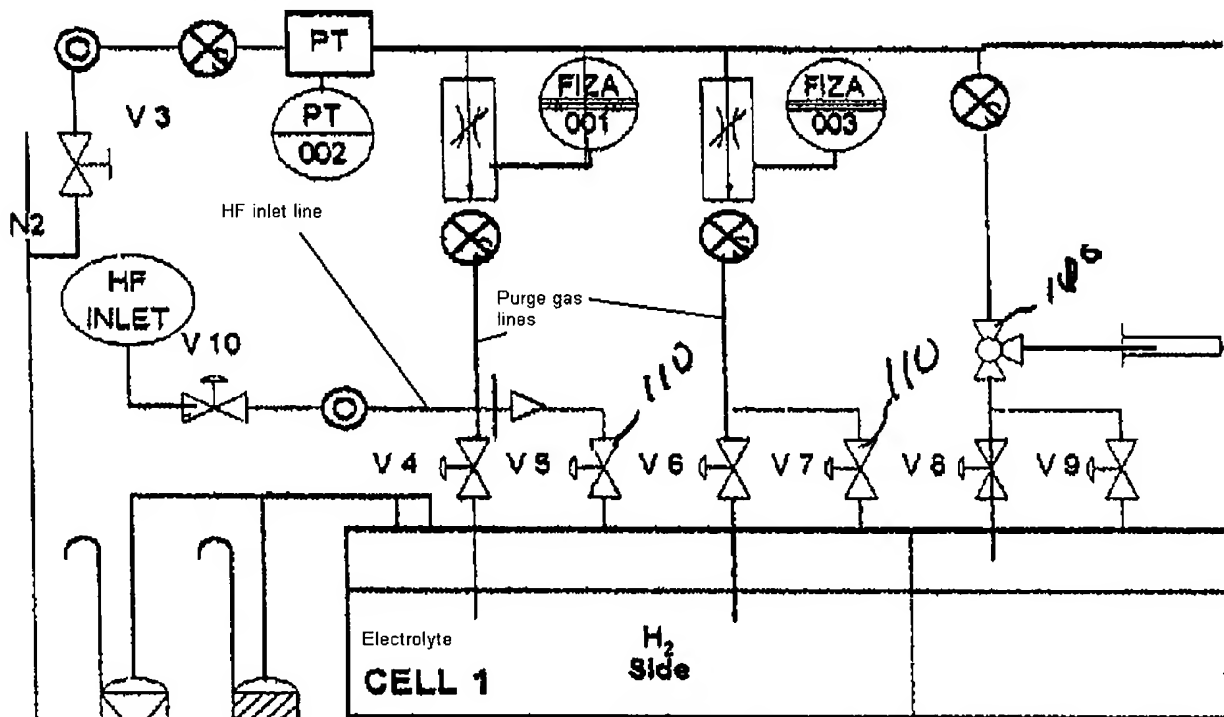
Claims 1, 4 and 6 have been amended to further specify that the hydrogen fluoride (HF) gas inlet is disposed in the electrolyte in the electrolytic bath. Basis for this is believed to be clearly evident from Figs. 1 and 4. It is also inherent in the description of the risk of backflow of the electrolytic bath into the HF feed line, which the invention intends to avoid (page 2, lines 23-30).

More particularly, in the case of a fluorine gas generator having a HF gas feed line disposed in the electrolyte, with an automatic valve disposed in the HF feed line for interrupting the HF gas feeding, the closure of the automatic valve can create a negative pressure downstream of the valve, possibly resulting in an inflow of the electrolytic bath into the HF feed line and clogging of the feed line due to solidification of the electrolyte. The present invention therefore provides an inert gas substitution means for eliminating the HF gas remaining in the HF gas feed line on a side downstream from the automatic valve, and substituting an inert gas therefor, e.g., the inert gas feed line 91, inert gas storage tank 92, and automatic valves 73 and 74.

The claims recite “inert gas substitution means” provided for eliminating the hydrogen fluoride gas remaining in at least the part of the HF feed line located downstream of the first automatic valve and upstream of the hydrogen fluoride gas inlet. This is a “means plus function” limitation directed to the structure disclosed in the specification as corresponding to the claimed function, and equivalents. 35 U.S.C. § 112, ¶6. The structure disclosed in the specification as corresponding to this “means” includes the inert gas feed line 91 which connects to the HF feed line, and equivalent structures also connect to the HF feed line.

Claims 1 and 4 were newly rejected under 35 U.S.C. §102 as being anticipated by U.S. patent publication 2004/0037768 (Jackson). Claims 2, 3, 5 and 6-9 were rejected under 35 U.S.C. §103 as being obvious over Jackson. These rejections are respectfully traversed, particularly in view of the present amendments.

Jackson discloses a process for producing fluoride gas by supplying HF gas to a cell 14 containing an electrolyte composed of HCl, potassium bichloride and hydrogen fluoride (paragraph [0047]). As best seen in the annotated partial view below taken from Fig. 3 of Jackson, the HF gas inlet line is provided with valves V10 and V5, and a one way valve, and opens at the top surface of the cell – above the surface of the electrolyte. The N₂ purge gas lines are provided for removing contaminants from the system after replacing the sodium fluoride traps 32 or when the system is otherwise exposed (paragraph [0054]). They each connect to the cell itself, and not to any portion of the HF inlet line.



It is evident that Claims 1 and 4 are not anticipated by, or obvious over, Jackson for a number of reasons, including:

1. The HF gas inlet line is not disposed in the electrolyte bath in Jackson, but instead opens at the top surface of the cell – above the surface of the electrolyte. Therefore, the backflow problem to be solved by the invention would not arise in Jackson.

2. Jackson does not provide the claimed “inert gas substitution means for eliminating the hydrogen fluoride gas remaining in at least part of said line on the side downstream from said first automatic valve on said hydrogen fluoride gas feed line, which part is located downstream of said first automatic valve and upstream of said hydrogen fluoride gas inlet, and substituting an inert gas therefor.” The structure disclosed in the present specification as corresponding to this “means” is the inert gas feed line 91 which connects to the HF feed line, and an equivalent must also connect to the HF feed line. A purge line feeding to the cell as in Jackson would not be an equivalent because: (1) it does not connect to the HF feed line; and (2) the inert gas according to the disclosed structure reaches the HF feed line first and flows therefrom to the electrolyte in the cell; in contrast, the purge gas from a purge line feeding to the cell (Jackson) will not even reach the HF feed line disposed in the electrolyte, or if it does, only after filling the cell and displacing the electrolyte – the *opposite* sequence as compared to the disclosed means.

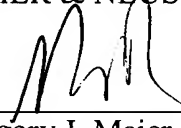
Moreover, it would not have been obvious to have replaced the N2 purge lines of Jackson with an “an inert gas substitution means” which connects to an HF feed line disposed in the electrolyte. The purpose of the N2 purge in Jackson is to remove contaminants from the entire system after replacing the sodium fluoride traps 32 or when the system is otherwise exposed (paragraph [0054]). A purge gas provided to a HF feed line disposed in the electrolyte cannot reach the remainder of the cell unless its pressure is sufficient to displace the electrolyte into which the HF feed line is disposed, and so this would be avoided by one

skilled in the art looking to purge the entire system. Therefore, the amended claims would not have been obvious from Jackson.

Applicants believe that the present application is in a condition for allowance and respectfully solicit an early notice of allowability.

Respectfully submitted,

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